

WHAT IS CLAIMED IS:

1. An electrical power-drive device including at least one motor and at least one gear comprising:

an output shaft connectable to at least one of: a rotatable tube, and a rod;

5 at least one stationary mount;

wherein a mechanical subset including the motor and gear is elastically coupled by at least a first elastic coupling means and a second elastic coupling means to the output shaft and to the stationary mount.

2. The device of Claim 1, wherein the motor, gear, tube and/or rod are aligned
10 on the same axis, the axis being oriented horizontally.

3. The device of Claim 2, wherein the weight of the mechanical subset is at least partially shared between the first and second elastic coupling means.

4. A powered assembly, comprising:
at least one object that can be moved between an open configuration and a
15 closed configuration;
at least one motor;

at least one actuator coupled to the motor and the object to move the object when the motor is energized;

at least one gear train coupled to the motor; and

at least one noise dampening coupling disposed in one of: a location between the gear train and the actuator to couple rotational motion of the gear train to the actuator, and between the motor and a stationary mount to couple the motor to the mount.

5 5. The powered assembly of Claim 4, wherein the motor is powered by at least one dc battery.

10 6. The powered assembly of Claim 5, wherein the object is a window covering.

 7. The powered assembly of Claim 6, wherein the noise dampening coupling is made of at least one of: metal, and plastic, the noise dampening coupling being cylindrically-shaped and having formed therein at least one of: (a) plural slots oriented perpendicularly to a long axis of the coupling, at least two slots being axially spaced from each other and being radially staggered from each other with neither extending completely around the circumference of the coupling, and (b) one spiral-shaped slot extending completely around the circumference of the coupling for multiple turns.

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8. The powered assembly of Claim 7, wherein the noise dampening coupling is flexible about its longitudinal axis but is substantially resistant to twisting under the influence of torque about its longitudinal axis.

9. The powered assembly of Claim 4, further comprising at least one tube holding
5 the motor and at least one sound mount interposed between the motor and tube.

10. The powered assembly of Claim 4, further comprising at least one tube holding the motor and defining an end and at least one sound plug interposed between the motor and the end of the tube.

11. The powered assembly of Claim 4, wherein the noise dampening coupling is
10 a rotatable noise dampening coupling interposed between the gear train and the actuator to couple rotational motion of the gear train to the actuator, and the assembly further comprises:

at least one non-rotatable noise dampening coupling disposed between the motor and a stationary mount to couple the motor to the mount.

12. The powered assembly of Claim 11, wherein the non-rotatable noise dampening
15 coupling is flexible about its longitudinal axis but is substantially resistant to twisting under the influence of torque about its longitudinal axis.

13. The powered assembly of Claim 11, further comprising a secondary rotatable noise dampening coupling interposed between the rotatable noise dampening coupling and the actuator, the rotatable noise dampening couplings rotating together.

14. The powered assembly of Claim 13, wherein the object is a window covering and the enclosure is a head rail, and the assembly further comprises a metal tube within the head rail and surrounding at least the motor and gear train but not the secondary rotatable noise dampening coupling, a secondary non-rotatable noise dampening coupling being interposed between the motor and the mount.

15. The powered assembly of Claim 11, wherein the non-rotatable noise dampening coupling surrounds the rotatable noise dampening coupling.

16. The powered assembly of Claim 11, wherein the motor is interposed between the non-rotatable noise dampening coupling and the rotatable noise dampening coupling.

17. A drive assembly for a window covering including an actuator in a hollow enclosure, comprising:

an electrically-powered drive structure couplable to the actuator to move the window covering when the drive structure is energized; and

at least one noise dampening coupling engaged with the drive structure and couplable to one of: the actuator, to couple the drive structure to the actuator while suppressing transmission of vibrations from the drive structure to the enclosure, and a mount, to engage the drive structure with the mount.

5 18. The drive assembly of Claim 17, wherein the drive structure is disposable in the enclosure.

19. The drive assembly of Claim 18, wherein the drive structure is powered by at least one dc battery.

10 20. The drive assembly of Claim 17, wherein the noise dampening coupling is made of at least one of: metal, and plastic, the noise dampening coupling being cylindrically-shaped and having formed therein at least one of: (a) plural slots oriented perpendicularly to a long axis of the coupling, at least two slots being axially spaced from each other and being radially staggered from each other with neither extending completely around the circumference of the coupling, and (b) one spiral-shaped slot extending completely around
15 the circumference of the coupling for multiple turns.

21. The drive assembly of Claim 17, wherein the noise dampening coupling is flexible about its longitudinal axis but is substantially resistant to twisting under the influence of torque about its longitudinal axis.

22. The drive assembly of Claim 17, further comprising:

5 at least one tube defining an end and holding the drive structure; and at least one of:

a sound mount interposed between the drive structure and tube; and

a sound plug interposed between the drive structure and the end of the tube.

10 23. The drive assembly of Claim 17, wherein the noise dampening coupling is a rotatable noise dampening coupling coupled to the actuator to couple the drive structure to the actuator while suppressing transmission of vibrations from the drive structure to the enclosure, and the assembly further comprises:

15 at least one non-rotatable noise dampening coupling between the drive structure and the enclosure mount, to engage the drive structure with the mount, the non-rotatable noise dampening coupling being flexible about its longitudinal axis but substantially resistant to twisting under the influence of torque about its longitudinal axis.

24. The drive assembly of Claim 23, further comprising a secondary rotatable noise dampening coupling interposed between the rotatable noise dampening coupling and the actuator, the rotatable noise dampening couplings rotating together.

25. The drive assembly of Claim 23, further comprising a metal tube within the enclosure and surrounding at least the drive structure but not the secondary rotatable noise dampening coupling, a secondary non-rotatable noise dampening coupling being interposed between the motor and the mount.

26. The drive assembly of Claim 23, wherein the non-rotatable noise dampening coupling surrounds the rotatable noise dampening coupling.

27. The drive assembly of Claim 23, wherein the drive structure is interposed between the non-rotatable noise dampening coupling and the rotatable noise dampening coupling.

28. A drive assembly for a window covering including an actuator in an enclosure, comprising:

an electrically-powered drive structure couplable to the actuator to move the window covering when the drive structure is energized; and

means for coupling the drive structure to the actuator and/or the enclosure while suppressing transmission of vibrations from the drive structure to the enclosure.

29. The drive assembly of Claim 28, wherein the means for coupling includes at least one rotatable noise dampening coupling.

5 30. The drive assembly of Claim 29, wherein the rotatable noise dampening coupling is made of at least one of: metal, and plastic, the rotatable noise dampening coupling being cylindrically-shaped and having at least one slot formed therein.

10 31. The drive assembly of Claim 30, wherein the rotatable noise dampening coupling has at least one of: (a) plural slots oriented perpendicularly to a long axis of the coupling, at least two slots being axially spaced from each other and being radially staggered from each other with neither extending completely around the circumference of the coupling, and (b) one spiral-shaped slot extending completely around the circumference of the coupling for multiple turns.

32. The drive assembly of Claim 29, further comprising:

15 at least one non-rotatable noise dampening coupling operably disposed to dampen vibration caused by the drive structure, the non-rotatable noise dampening

coupling being flexible about its longitudinal axis but substantially resistant to twisting under the influence of torque about its longitudinal axis.

33. The device of Claim 1, wherein the mechanical subset is disposed in a tubular envelope engaged with the stationary mount on a first side of the subset and with a bearing
5 guiding the output shaft on a second side of the subset.

34. The device of Claim 33, wherein the tubular envelope is cylindrical.

35. The device of Claim 1, wherein at least one of the first elastic coupling means and second elastic coupling means is flexible about its longitudinal axis but is substantially resistant to twisting under the influence of torque about its longitudinal axis.

10 36. The device of Claim 1, wherein at least one of the first elastic coupling means and second elastic coupling means is made of at least one of: metal, and plastic, and is cylindrically-shaped and has formed therein at least one of: (a) plural slots oriented perpendicularly to a long axis of the coupling means, at least two slots being axially spaced from each other and being radially staggered from each other with neither extending
15 completely around the circumference of the coupling means, and (b) one spiral-shaped slot extending completely around the circumference of the coupling means for multiple turns.

37. The device of Claim 1, further comprising:

a rotatable component selected from the group consisting of a rotatable tube and a rotatable rod, the rotatable component being coupled to the output shaft; and

at least one object that can be moved by the tube or rod between an open configuration and a closed configuration, wherein the object is selected from the group including solar screens, projection screens, awnings, and roller shutters.

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